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LAE 4314 – Hoffman

Thematic Unit

Due: April 14, 2009

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**THEMATIC UNIT**

**Theme:** Three .. Two .. One .. BLAST OFF!

**Grade level**: 3rd Grade

**Approximate Length:** 4 weeks

**Objectives:**

*Students will:*

1. *Understand the concept of gravity*
2. *Learn about and contents of the solar system*
3. *Explore space through activities and field trips*
4. *Create a classroom space shuttle*
5. *To learn about astronauts and how to live as an astronaut*

**Sunshine State Standards:**

**Language Arts**

*LA. 3.1.6.: The student will use new vocabulary that is introduced taught directly*

*LA. 3.1.6.3.: The student will use context clues to determine meanings of unfamiliar words*

*LA. 3.1.6.10.: The student will determine of unfamiliar words using a dictionary, thesaurus, and digital tools.*

*LA. 3.1.7.7.: The student will compare and contrast elements, settings, characters, and problems in two texts*

*LA. 3.2.2.3.: The student will organize information to show understanding of main ideas within a text*

*LA. 3.3.1.3: The student will prewrite by using organizational strategies (e.g. graphic organizer, KWL chart, log) to make a plan for writing that includes a main idea*

*LA. 3.3.2.2.: The student will draft writing by organizing information into a logical sequence through the use of time-order words and cause/effect transitions*

*LA. 3.3.5.2.: The student will add graphics where appropriate*

*LA. 3.3.5.3.: The student will share the writing with the intended audience*

*LA. 3.4.2.4.: The student will write a variety of communications (e.g. friendly letters, thank-you notes, formal letters, messages, invitations)*

*LA. 3.4.2.5.: The student will write simple directions to familiar locations using cardinal directions and landmark, and create accompanying map.*

*LA. 3.6.2.1.: The student will determine information needed for a search by narrowing or broadening a topic, identify key words.*

*LA. 3.6.2.4.: The student will record basic bibliographic data and recognize intellectual property rights (e.g. cites sources of ideas)*

**Science**

*SC. 3.E.5.1.: Explain that stars can be different; some are smaller, some are larger, and some appear brighter than others; all except the Sun are so far away that they look like points of stars*

*SC. 3.E.5.2.: Identify the Sun as a star that emits energy; some of it in the form of light*

*SC. 3.E.5.3.: Recognize that the Sun appear large and bright because it is the closest star to Earth*

*SC. 3.E.5.4.: Explore the Law of Gravity by demonstrating that gravity is a force that can be overcome*

*SC. 3.E.5.5.: Investigate that the number of stars that can be seen through the telescope is dramatically greater than those seen by the unaided eye*

*SC. 3.E.6.1.: Demonstrate that radiant energy from the Sun can heat objects and when the Sun is not present, heat may be lost.*

*SC. 3.N.1.2.: Compare the observations made by different groups using the same tools and seek reasons to explain the differences across groups*

*SC. 3.N.1.6.: Infer based on observation*

*SC. 3.N.3.2.: Recognize that scientists use models to help understand and explain how things work*

*SC. 3.P.8.3.: Compare materials and objects according to properties such as size, shape, color, hardness, texture*

*SC. 3.P.10.4.: Demonstrate that light can be reflected, retracted, and absorbed*

**Mathematics**

*MA. 3.G.3.1.: Describe, analyze, compare, and classify two-dimensional shapes using sides and angles – including acute, obtuse, and right angles – and connect these ideas to the definition of shapes*

*MA. 3.G.5.1.: Select appropriate units, strategies, and tools to solve problems using perimeter, area, and distance*

*MA. 3.G.5.3.: Tell time to the nearest minute and to the nearest quarter hour, and determine the amount of time elapsed*

*MA. 3.S.7.1.: Construct and analyze frequency tables, bar graphs, pictographs, and line plots from data, including data collected through observations, surveys, and experiments*

**Activities:**

**Introduction**

To begin our exploration into space, I will have the students participate in a listening and seeing activity where I will play different sounds (or video clips) and show pictures of objects that relate to space. Students will be instructed to write down or draw what they think the sound or picture is or how the sound or picture makes them feel.

I will play three different sounds for about a minute each and show five pictures for about forty-five seconds each. Students will have eight star cut-outs at their desks, and they will write or draw on the stars to depict their knowledge or attitude about what they have seen or heard.

Sounds: (a) Space shuttle launch (b) Twinkle Little Star lullaby (c) A snippet from School of Rock: I’m a Victim of Gravity video (d) Picture of the Milky Way Galaxy (e) Picture of the Planets (f) Picture of an astronaut suit (g) Picture of the Kennedy Space Center (h) Picture of the Moon

**Evaluation/Assessment:**

This activity will serve much like a KWL chart. This activity will allow me to determine how much the students know about the most known and recognizable concepts or objects of space. After the activity I will assess students’ understanding of instructions and how well they were able to follow the instructions. The stars will hang from the ceiling – they are the beginning of many more space-inspired decorations. At the end of the unit, students will be allowed to take down their stars and write what they learned about each different object or concept on the back of each star.

**Week One: “To Infinity and Beyond!”**

During the first week of the unit students will explore the world that exists beyond Earth. Students will learn about gravity, stars, galaxies, the moon and the sun, and the solar system’s nine planets. The following activities are the ways in which students will explore to “infinity and beyond!”

**Poetry** Students will create poems to help them remember all nine planets of the solar system. We will read The Sun in Me to activate prior knowledge and give them ideas on how to write about poems using poetry.

*SSS: LA. 3.4.1.1*

**Evaluation/Assessment** Students are to create at least two poems about a planet of their choice. Students should demonstrate the conventions of writing a poem.

**Creating a Solar System** Students will re-create a solar system using all nine planets. As a class we will go over the shapes they will need to use to make the different planets and instructions on how to make appropriate estimations for the distances between the planets. Students will be given a rubric that will list everything needed for a certain amount of points. Students will use knowledge of planets, approximation skills for the distance between planets, and their creative ability to create the solar system.

*SSS: SC. 3.P.8, LA. 3.1.6, MA. 3.G.5.1, MA. 3.G.3.1*

**Evaluation/Assessment** Students will be assessed on whether they placed planets in the correct order. Students will also be assessed on the accuracy of the distance between their planets. Students will orally present their solar systems, so I will assess how well students understand concepts and well they are able to use new vocabulary words introduced in the unit.

**Read Aloud** Students will interactive in a read aloud. As I read The Magic School Bus Lost in the Solar System, students will have their learning logs where they will write down new vocabulary words and concepts they do not understand. After the read aloud I will take time to go over the new words and concepts for students using dictionaries and explanations. We will have a bulletin board in the classroom that will have a space for vocabulary words and concepts that will be taught during the unit. I will have students add to the list as they see fit. I will also have students use these words in their writing logs as they create three sentences with three new words. This book will be read over several days.

*SSS: LA. 4.1.6.10*

**Evaluation/Assessment** Students will be assessed on their participation, their ability to find words in the dictionary, and how well they use them in three sentences.

**Literature Circles** Students will get into groups of about four to five students. Each group will have a different space book. For instance, groups will receive books such as The Usborne First Encyclopedia of Space, Journey to the Planets, or Our Solar System. Students will gather information from their chosen book and present that information to the rest of the class.

*SSS: LA 3.2.2.3, LA. 3.6.2.1, LA. 3.5.2.1*

**Evaluation/Assessment** I will walk around the room observing and monitoring the students as they work in their literature circles. I will assess students on their oral presentations.

**Space Twister** This game is a spin-off of the traditional Twister game. Instead of having plain-colored circles on the Twister map, we will have pictures of planets on the circles. There will be three mats so that all students can play at the same time. I will spin the wheel and call out where students need to step.

*SSS: SC 3.N.1.6*

**Evaluation/Assessment** I will assess the accuracy of each student as they step on the planets. What I call out will give the students clues on what planet to step on, so I will assess students based upon what they step on.

**What Goes Up .. Must Come Down Experiment** Students will experiment with different classroom objects to test the laws of gravity. Two objects will be dropped from the air at the same time and students are to guess (hypothesis) which one will hit the ground first. Students will also create a procedure and record their results in the form of a report.

*SSS: SC. 3.E.5.4 SC 3.N.1.2, LA. 3.3.5.3, MA. 3.S.7.1, LA. 3.5.2.1*

**Evaluation/Assessment** Students will create an individual report but will be allowed to converse with students in their groups. I will assess the content of the science report. Students will also informally present their observations and explain what they learned about gravity.

**Week Two: Calling all Astronauts!**

During the second week of the unit students will learn about astronauts. They will learn what astronauts do in and out of space, and how they survive in space. Students will become astronauts themselves!

**Astronaut Research** Students will be given time to research an astronaut of their choice. They may choose an astronaut they may already know or one that I provide for them. Students will use books, websites, and magazines to find information they need about their particular astronaut.

*SSS: LA 3.6.2.1, LA 3.6.2.4*

**Evaluation/Assessment** Student will need to collect at least ten facts about an astronaut and provide a works cited list. Students must include interesting facts about who the astronaut is and what how they done as an astronaut. Information will be posted in the classroom and I will evaluate the information given by each student.

**Literature Circle** Students will get into groups of four to five students and choose a book from the classroom about astronauts. Students may use books such as U.S. Space Camp Book of Astronauts, I Want to Be … an Astronaut, and biography books about astronauts. Students will discuss and record information about astronauts. Students will act as though they are training to become astronauts so they are taking the time to gather as much information as possible on how to be a great astronaut and survive in space.

*SSS: LA 3.6.2.1, LA. 3.4.1.1, LA. 3.3.2.1, LA. 3.3.3.1*

**Evaluation/Assessment** Students will select five new things they learned about astronauts. Using those five facts and anything other information they would like to include, students will create a short narrative story. Students will display all parts of the writing process.

**Telescopes** Students will create a telescope using a paper towel roll and a magnifying lens. Students will use their telescope at night at home. They are to record a constellation (a guide of how to find the constellations and what they look like will be provided) and a view of what they see through their telescope. They will complete a compare and contrast graphic organizer that compares what is seen with the naked eye and what is seen with the telescope.

*SSS: SC. 3.E.5.5, SC. 3.E.5.1, SC. 3.N.1.2, LA. 3.3.5.2, LA 3.3.1.3, LA. 3.3.5.3*

**Evaluation/Assessment** Students will use the graphic organizer to help them recreate what was seen. Students may write about the differences or they may draw pictures to show the differences. Students will compare what they saw with what their classmates saw.

**Training** Students will begin to train as astronauts. Students practice space walking and experience no gravity with Moon shoes. Students will move around the classroom with the Moon shoes.

*SSS: SC. 3.E.5.4, LA. 3.4.1.1*

**Evaluation/Assessment** Students will compare and contrast what they were able to do with and without the Moon shoes. Students will write a paragraph about their experience and how it relates to gravity.

**Week Three: The Space Shuttle**

During the three week of the unit students will learn about the space shuttle and how the space shuttle works. Students will visit the Kennedy Space Center for further exploration.

**Collage** Students will use pictures from old magazines to make a collage of items they would like to take with them into space.

*SSS: LA. 3.3.5.3, LA. 3.5.2.1*

**Evaluation/Assessment** Students will present their collage to the class and explain what they are bringing and why.

**Book Pass** Students will review different pieces of text by passing them around the class. Textbooks, newpapers, magazines, and children’s literature will be used. Students will use the materials to create their own book of information about space shuttle and space exploration.

*SSS: LA. 3.5.2.1, LA. 3.1.7.7*

**Evaluation/Assessment** Students will present their books to the class and explain how they found certain information in a given text. Students will also compare their materials and explain the different type of information that was offered in each text, and explain their thought process of what text would be beneficial to them in their research.

**Space ship** Students will create a classroom space ship. Students will use polygons and non-polygons to create the space ship. They will classify them and determine which are appropriate for constructing their space ship.

*SSS: MA. 3.G.3.1*

**Evaluation/Assessment** Students will complete a worksheet beforehand on polygons. Students will then the information from the worksheet to help them create their space ship. I will evaluate their performance on the worksheet.

**Read Aloud** We will read about clocks and time in the book Mr. Cuckoo. Students will actively participate during the read aloud as I will stop and ask them questions about time and the happenings of the story. Students are to bring their reading log books and write down any words that are unfamiliar to them.

*SSS: MA. 3.G.5.3, LA. 3.1.6, LA. 3.1.6.3, LA. 3.1.6.10*

**Evaluation/Assessment** Students will create a schedule for their time in space. The schedule will help students practice time and different time intervals. I will assess accuracy. For unfamiliar words, students will first write a sentence based upon how it was used in the story. Students will use their knowledge of context clues to make that sentence. Then students will use a dictionary and check to see if they used the word correctly. Two sentences per word.

**Shuttle Clock Countdown** Students will use the online stopwatch tool to create a computer clock countdown for our departure. Students will go onto the computer and create the digital clock countdown. Students will also explore the website kidsastronomy.com and do activities.

*SSS: MA. 3.G.5.3, LA. 3.6.4.1*

**Evaluation/Assessment** Students will review time and clocks and use this information to create a digital countdown time for our departure.

**Kennedy Space Center Field Trip** Students will enjoy and observe space through stimulations, the IMAX theatre, and presentations. After the field trip, students will write a postcard to the Kennedy Space Center staff members for the field trip. What they liked and what they learned while at the center should be included in the letter. The book Postcards from Pluto will be used to help students with learning how to write a postcard.

*SSS: LA. 3.4.2.4, SC. 3.N.3.2, LA. 3.3.5.1*

**Evaluation/Assessment** Students should mastery components of a postcard.

**Week Four: Shuttle Launch and Shuttle Landing!**

**Solar Ovens** Students will explore the power of the sun through a cooking activity. Students will create a solar oven and use the oven to cook hotdogs. This will be the first science experiment done while ‘in space.’ Students will create a report about the experience and include all components of a science project.

*SSS: SC. 3.E.5.2, SC. 3.E.6.1, SC. 3.P.10.4, MA. 3.S.7.1*

**Evaluation/Assessment** I will grade the written report using a rubric.

**Site Map** Students will create a map of their site once they have landed on a planet. Students will use their knowledge of perimeters, scales, and legends to create this map.

*SSS: MA. 3.G.5.1, LA. 3.4.2.5*

**Evaluation/Assessment** Students will be assessed on measurement accuracy, and how successful they are using a scale, legend, etc.

**Flip Picture Book** Students will view a video clip of a space shuttle launch and recreate the scene using a flip picture book. Students will draw pictures of their shuttle launch second-by-second.

*SSS: LA. 3.3.5.2*

**Evaluation/Assessment** How well students are able to reenact a space shuttle launch will be evaluated. I will use a rubric grading system to evaluate the accuracy of information.

**Hall of Fame** Students will have the chance to be entered into the classroom’s Astronaut Hall of Fame. Pictures of the students and the activities they did will be posted in the hallway outside of the classroom for other students, teachers, and personnel to see. In order to be entered, students will need to write a persuasive paper explaining why they should be inducted.

*SSS: LA. 3.3.1.3, LA. 3.3.2.2, LA. 3.3.5.2, LA. 3.3.1.1, LA. 3.3.5.1, LA. 3.4.3.1*

**Evaluation/Assessment** Students will be assessed on the writing process. Students will need to show each stage of the writing process. Assessment will also be on the final persuasive piece.

**Resource/Materials list:**

**Books**

**Picture Books**

*Maynard, C. The Space Shuttle. ((1994). New York: Kingfisher.*

*Leedy, L. Postcards from Pluto A Tour of the Solar System. (1993) New York: Holiday House.*

*Cole, J. The Magic School Bus Lost in the Solar System. (1992): Scholastic.*

*Simon, S. Our Solar System. (1992). New York: Morrow Junior Books.*

*Ruiz, A. The Origin of the Universe. (1996). New York: Sterling Publishing Co., Inc.*

**Biography**

*Briggs, C. Women in Space: Reaching the Last Frontier. (1988). Minneapolis: Lerner Publications Company.*

*McCutcheon, S. & McCutcheon, B. Space and Astronomy The People Behind the Science. (2006). New York: Chelsea House.*

**Nonfiction**

*Dowswell, P. The Usborne First Encyclopedia of Space. (2001). London, England: Usborne Publishing.*

*Lauber, P. Journey to the Planets. ((1982). New York: Crown Publishers, Inc.*

*Schyffert, U. The Man who went to the Far Side of the Moon. (1999). Sweden: Chronicle Books.*

*Baird, A. U.S. Space Camp Book of Astronauts. (1996). New York: Morrow Junior Books.*

*Maze, S. & O’Neill, C. I Want to Be … An Astronaut. (1997) New York: Harcourt Brace & Company.*

*Miller, R. Worlds Beyond Extrasolar Planets. (2002). Connecticut: Twenty-first Century Books.*

**Poetry**

*Nicholls, J. The Sun in Me Poems about the Planet. (2003). New York: Barefoot Books.*

**Fiction**

*Bloom, B. Mr. Cuckoo. (1998). New York: Mondo Publishing.*

*Maze, S. & O’Neill, C. I Want to Be … An Astronaut. (1997) New York: Harcourt Brace & Company.*

*H. Sandra. Space, Science and Other Things – Elementary (K-6) Interactive “Space Show.” (2005).*

**Video**

*School House Rock: I’m a Victim of Gravity*

**Websites**

*http://www.kidsastronomy.com*

*http://www.perpetualpreschool.com/preschool\_themes/space.htm*

*http://www.hometrainingtools.com/articles/science-projects*

*http://www.online-stopwatch.com*

*httip://www.kennedyspacecenter.com*

*http://www.spacevidcast.com*

**Artifacts**

*Items from the Kennedy Space Center field trip*